Installation Instructions

hp StorageWorks SAN Switch Rack Mount Kit

Fourth Edition (September 2004)

Part Number: AV–RU6YD–TE

This document provides step-by-step installation instructions for using the SAN Switch Rack Mount Kit with the following specific HP branded racks: HP 9000 Series Rack, HP 10,000 Series Rack and HP System/e Rack.

For the latest version of these Installation Instructions and other documentation, access the HP storage website at: http://www.hp.com/country/us/eng/prodserv/storage.html.

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SAN Switch Rack Mount Kit Installation Instructions
Fourth Edition (September 2004)
Part Number: AV–RU6YD–TE

About this Document

This document describes how to use the *optional* SAN Switch Rack Mount Kit to install the following HP StorageWorks Storage Area Network (SAN) devices:

- Multi-protocol (MP) Router
- SAN Switch 2/8V
- SAN Switch 2/16, SAN Switch 2/16V or SAN Switch 2/16N
- SAN Switch 2/32

Note: The HP StorageWorks SAN Switch Rack Mount Kit is for use with the HP 9000 Series, HP 10,000 Series, and HP System/e racks only.

This section describes the content reflected in this document, including:

- Intended Audience, page 3
- Related Documentation, page 3
- Rack Stability, page 4
- Installation and Safety Guidelines, page 5
- Using the SAN Switch Rack Mount Kit to Install an HP StorageWorks Device, page 6

Intended Audience

This book is intended for use by system administrators who are experienced with:

- Setting up devices in a SAN
- HP StorageWorks Fibre Channel SAN switches and routers

Related Documentation

For the latest information, documentation, and firmware releases, please visit the following StorageWorks website: http://www.hp.com/country/us/eng/prodserv/storage.html.

For information about Fibre Channel standards, visit the Fibre Channel Association website, located at: http://www.fibrechannel.org.

Rack Stability

Rack stability protects personnel and equipment.

WARNING: To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling jacks are extended to the floor.
- The full weight of the rack rests on the leveling jacks.
- In single rack installations, the stabilizing feet are attached to the rack.
- In multiple rack installations, the racks are coupled.
- Only one rack component is extended at any time. A rack may become unstable if more than one rack component is extended for any reason.

Installation and Safety Guidelines

Read the following sections for installation guidelines. The SAN Switch Rack Mount Kit is for use with the following specific HP racks only:

- HP 9000 Series Rack
- HP 10,000 Series Rack
- HP System/e Rack

Rack Mount Checklist

Verify that the rack and the area around the rack meets the following requirements:

- Before proceeding to use this rack mount kit, verify that you are installing the device in one of the following HP supported rack models only:
  - HP Series 9000
  - HP Series 10,000
  - HP System/e rack
- Plan a rack space that is 1.5 units high (2.6 inches; 6.7 cm), 19 inches (48.3 cm) wide, and at least 23 inches (68.6 cm) deep for SAN switches. Or, for the MP Router, plan a rack space that is 2 units high.
- Ground all equipment in the rack through a reliable branch circuit connection, and maintain ground at all times. Do not rely on a secondary connection to a branch circuit, such as a power strip.
- Ensure that air flow and temperature requirements are met on an ongoing basis, particularly if the device is installed in a closed or multi-rack assembly.
- Verify that the additional weight of the device does not exceed the rack's weight limits or unbalance the cabinet in any way.
- Secure the rack to insure stability in case of unexpected movement.

Note: For proper air flow, the SFP media side must face the rear of the rack. This mounting allows air to enter from the front of the rack and to exhaust at the rear of the rack, similar to other rack-mounted equipment. This prevents overheating.

Using the SAN Switch Rack Mount Kit to Install an HP StorageWorks Device

Read this section to install a SAN Switch or MP Router in an HP Series 9000, HP Series 10,000, or HP System/e rack.

Note: The SAN Switch Rack Mount Kit installation requires one technician.

The following items are required to install the device in a rack:

- The HP StorageWorks MP Router or specific HP StorageWorks SAN Switch listed in the About this Document section on page 3.
- Power cables
- #2 Phillips screwdriver
- 7/16-inch wrench or socket
- SAN Switch Rack Mount Kit hardware shown in Table 1.

Table 1: Rack Mount Kit Rails and Rail Mounting Hardware

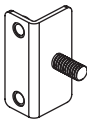
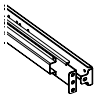
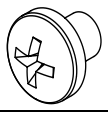
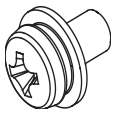
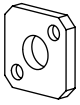
Item	Description
	(2) rear mounting brackets
	A right inner rail and a right outer rail
	A left inner rail and a left outer rail
	(14) #8-32 x 3/16-inch Phillips pan-head screws with thread lock for the SAN Switch 2/32 only.

Table 1: Rack Mount Kit Rails and Rail Mounting Hardware (Continued)

Item	Description
	(14) 8-32 x 5/16-inch Phillips pan-head SEMS screws for use with the MP Router, SAN Switch 2/8, SAN Switch 2/8V, SAN Switch 2/16, SAN Switch 2/16V and SAN Switch 2/16N.
	(10) #10-32 x 1/2-inch Phillips pan-head screws with captive star lock washer
	(8) #10 alignment washers
	(8) #10 adapter washers
	(2) 1/4-20 hex nuts with captive star lock washers
	(2) 1/4-inch flat washers

Caution: For proper air flow, the SFP media side of the device must face the rear of the rack. This mounting allows air to enter from the front of the rack and to exhaust at the rear of the rack, similar to other rack-mounted equipment. This prevents overheating, which may cause it to fail.

To install the HP StorageWorks device in a rack:

1. Check the contents of the shipping carton to verify that all the required parts and hardware are available.
2. Choose a mounting location in the rack.
3. Attach the rear mounting brackets to the rear rack uprights by completing one of the following steps:
   — For an HP 10,000 Series rack, assemble each of the two brackets with two #10-32 x 1/2-inch Phillips pan-head screws with captive star lock washers and two #10 adapter washers as shown in Figure 1.

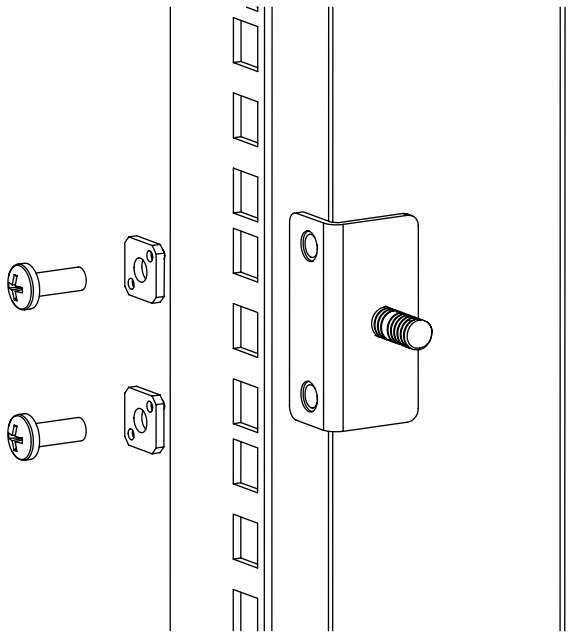


Figure 1: Installing the Rear Mounting Brackets (HP 10,000 Series Rack)

— For an HP System/e rack, install each of the two rear mounting brackets with two #10-32 x 1/2-inch Phillips pan-head screws and two #10 alignment washers as shown in Figure 2.

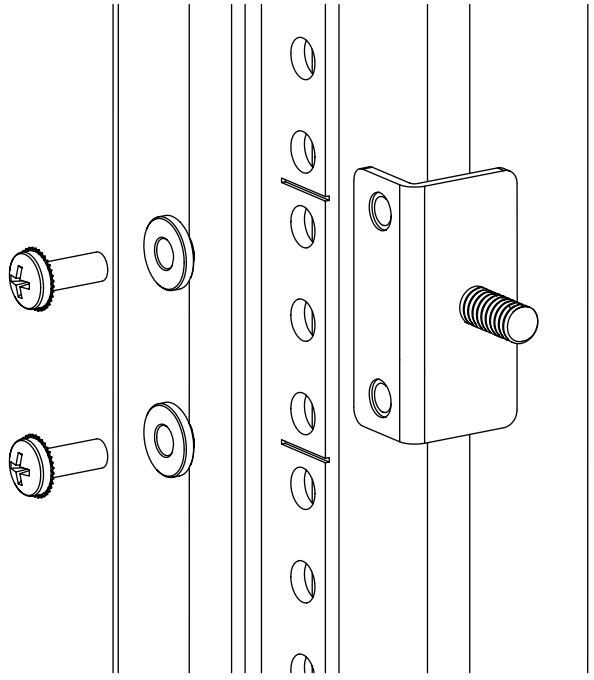


Figure 2: Installing the Rear Mounting Brackets (HP System/e Rack-Left Rear Upright)

Note: This kit contains both left rails and right rails. The rails are labelled `Right` and `Left`.

4. Assemble the outer rails by completing the following steps:
    a. Attach the left outer rail and the right outer rails to the rear mounting brackets using two 1/4-20 hex nuts with captive star lock washers. Attach the hex nuts loosely (as shown in Figure 3). Do not tighten; tighten the hex nuts later in step 12 on page 17.

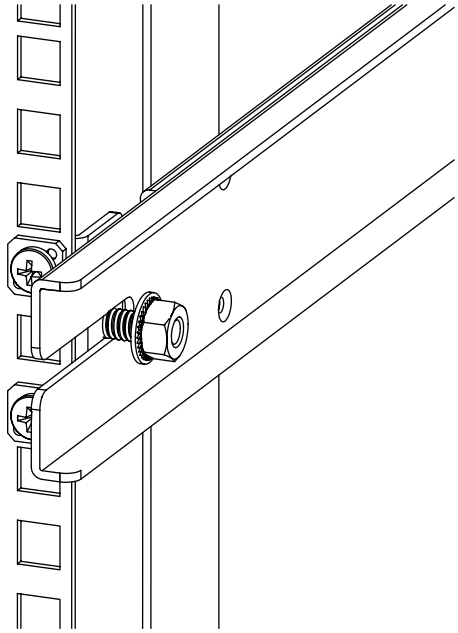


Figure 3: Installing the Outer Rails (HP 10,000 Series Rack)

b. Depending on the rack you are using, complete one of the following tasks:

— For an HP 10,000 Series rack, install two #10-32 x 1/2-inch Phillips pan-head screws with captive star lock washers and two #10 adapter washers in the upper and lower hole locations of the right rail. Then install two #10-32 x 1/2-inch Phillips pan-head screws with captive star lock washers and two #10 adapter washers in the upper and lower hole locations of the left rail, as shown in Figure 4.

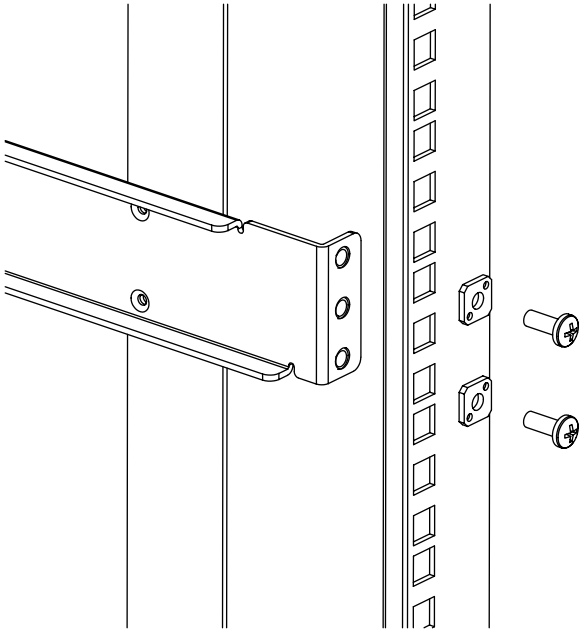


Figure 4: Assembling the Outer Rails (HP 10,000 Series Rack)

— For an HP System/e rack, install two #10-32 x 1/2-inch Phillips pan-head screws with captive star lock washers and two #10 alignment washers in the upper and lower hole locations of the right rail. Then install two #10-32 x 1/2-inch Phillips pan-head screws with captive star lock washers and two #10 alignment washers in the upper and lower hole locations of the left rail, as shown in Figure 5.

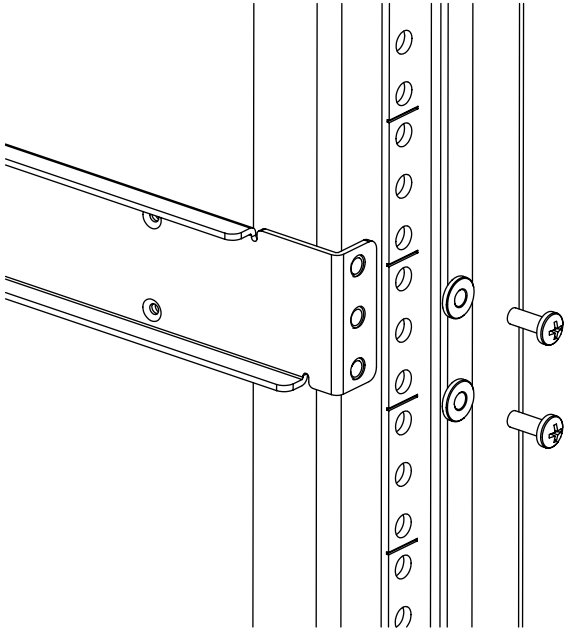


Figure 5: Assembling the Outer Rails (HP System/e Rack)

5. The SAN Switch Rack Mount Kit provides different screw types for securing the inner rails. Specific devices require a different number of these screws. Determine the number of screws to attach the inner rails to the device as follows:

Caution: Do not use any other screws other than the ones provided. Use of any longer lengths can cause damage to internal components.

   a. For the SAN Switch 2/8V, SAN Switch 2/16, SAN Switch 2/16V, SAN Switch 2/16N or MP Router models, locate ten # 8-32 x 5/16-inch Phillips pan-head SEMS screws to secure the inner rails (five screws per rail).

   b. For the MP Router models, locate six # 8-32 x 5/16-inch Phillips pan-head SEMS screws to secure the inner rails (three screws per rail).

   c. For the SAN Switch 2/32, locate twelve #8-32 x 3/16-inch Phillips pan-head screws with thread lock to secure the inner rails (six screws per rail).

6. Identify the screw holes on the inner rails for your specific device. The screw holes are labelled as follows:

   a. To attach the inner rails to the SAN Switch 2/8V, SAN Switch 2/16V or SAN Switch 2/16N use the screw holes marked **8**

   b. To attach the inner rails to the SAN Switch 2/32 use the screw holes marked **32**

   c. To attach the inner rails to the MP Router, use the screw holes marked **R**

Note: Remember to use the screw holes labelled 8 when attaching the inner rails to the SAN Switch 2/16V or SAN Switch 2/16N. DO NOT use the screw holes labelled 16.

7. Assemble the two inner rails (one on each side) to the device using the appropriate number of screws (refer to step 5).

   For example, Figure 6 shows an inner rail attached to the SAN Switch 2/16V with five screws. Attaching both rails requires ten screws.

   Also, Figure 7 shows an inner rail being attached to the MP Router with three screws. Attaching both rails requires six screws.

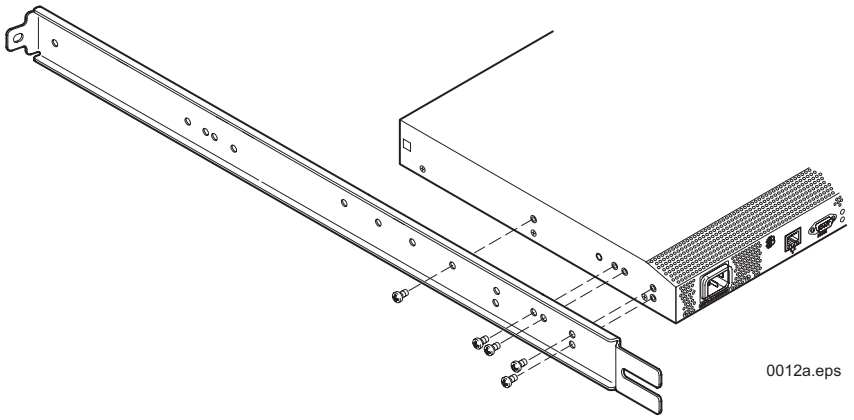


Figure 6: Attaching the Inner Rails to a SAN Switch 2/16V

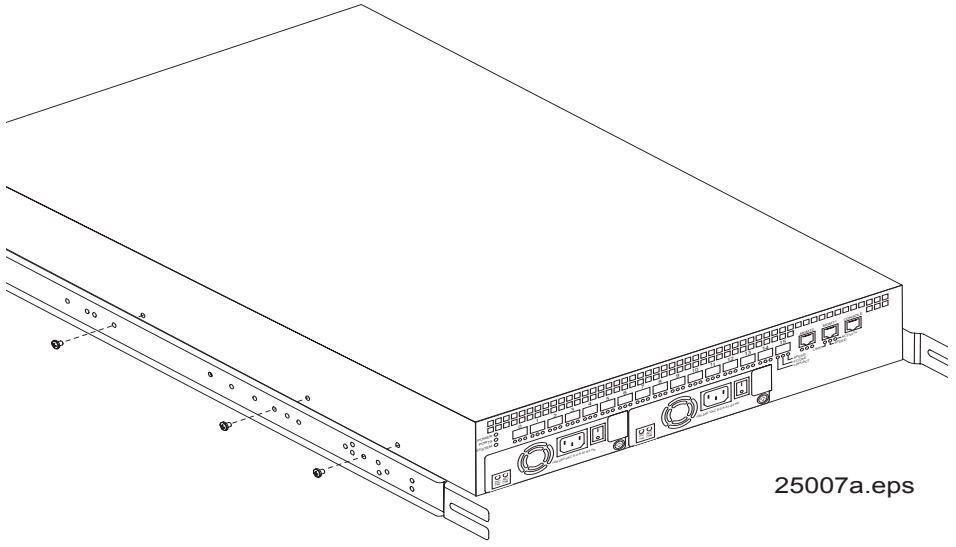


Figure 7: Attaching the Inner Rails to the MP Router

Note: For factory integration only, tighten the #8-32 x 3/16-inch Phillips pan-head screw with thread lock and torque between 6 to 8 inch-pounds.

8. Verify that a plenum is installed on the SAN Switch 2/8V, SAN Switch 2/16, SAN Switch 2/16V or SAN Switch 2/16N models only, as shown in Figure 8. The plenum is an overlay that dissipates the heat generated by the switch, and is necessary to prevent overheating.

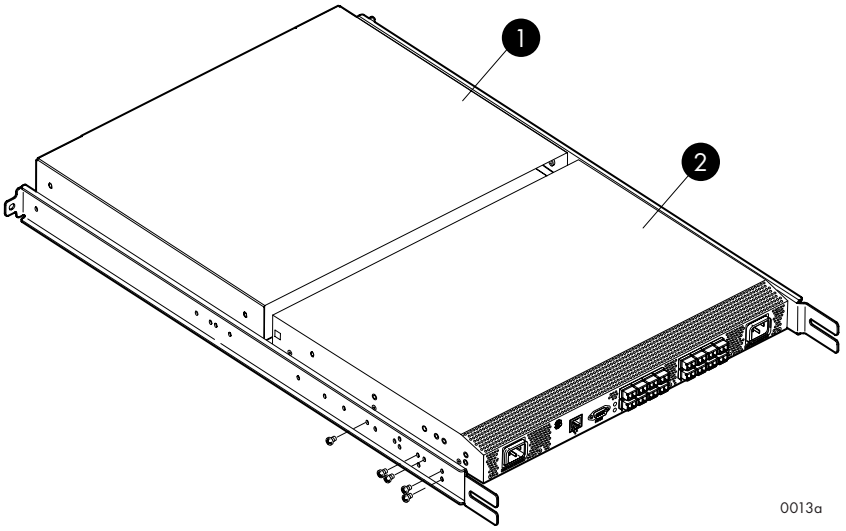


Figure 8: Attaching the Inner Rails on a SAN Switch 2/8V with Plenum

The components in Figure 8 include:

❶	Plenum
❷	Switch Chassis

9. Contact your authorized HP switch reseller for information if a plenum is not preinstalled on your SAN Switch 2/8V, SAN Switch 2/16, SAN Switch 2/16V or SAN Switch 2/16N model only.

Note: For the SAN Switch 2/8V, 2/16V or 2/16N, a plenum is required when the switch is installed in an HP 9000 Series, HP 10,000 Series or HP System/e rack.

The SAN Switch 2/16 model uses a shorter version of the plenum (part number A7346-00001). The SAN Switch 2/8V, SAN Switch 2/16V and SAN Switch 2/16N models use a longer version of the plenum (part number 5697-4919).

10. Insert the switch with the attached inner rails into the outer rails.

Note: This step applies to installing a switch in an HP 9000 Series, HP 10,000 Series or an HP System/e rack.

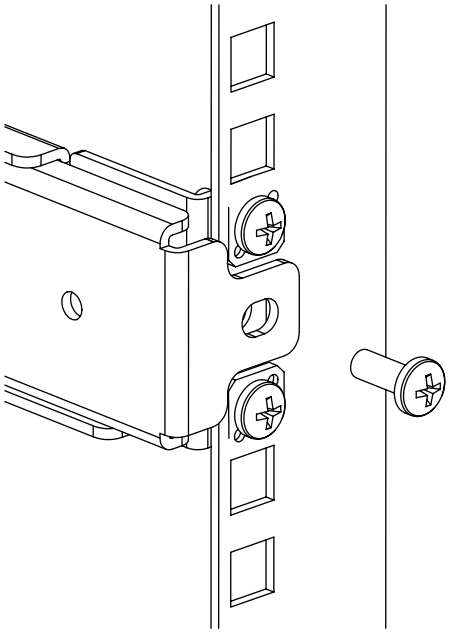


Figure 9: Securing the Device (in an HP 9000 Series, HP 10000 Series Rack))

11. Insert the device into the rack and install (2) #10-32 x 1/2-inch Phillips pan-head screws with captive star lock washers with one on each side. See Figure 9 and Figure 10.

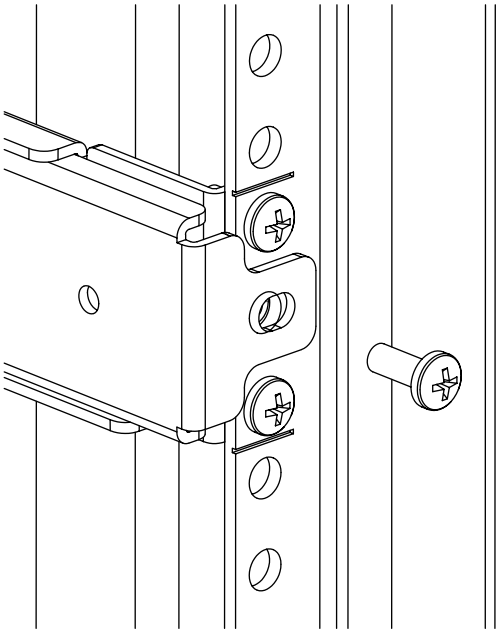


Figure 10: Securing the Device (in an HP System/e rack)

12. Tighten the hex nuts installed in step 4 on page 10. See Figure 3.

Note: To uninstall a device, remove the middle #10-32 x 1/2-inch Phillips pan head screw with captive star lock washer from either side of the rack uprights.